Age Adjusted Plotting on Growth Charts

&

Risk Assessment for Preterm Infants

4.4 and More...

Learning Objectives:

By the end of this session, you will be able to:

- State normal expectations of growth using the CDC growth chart for a full term infant.
- Contrast one difference between corrected age and adjusted age for preterm infants.
- Identify two Client Services screens where adjusted age is documented for the preterm infant.
- Describe how and when growth charts are plotted with an age adjustment in Client Services.
- Distinguish at least three new risk changes and when to apply specific risk(s) to the individual.
- State two health risks and concerns associated with preterm infants.
- Describe a normal growth pattern and expectation for a preterm infant.
- Demonstrate client centered communication about a child's growth to the caregiver.
- Apply at least one feeding recommendation for the preterm infant.
- Develop an awareness of how caregivers might perceive messages about their child's growth and feeding.
- Indicate three other "bonus" changes in Client Services software not related to preterm infants or the racial/ethnic tab.

Client Services Growth Chart

Background: Why Change Plotting of Growth Charts for Preterm Infants?

A national level workgroup called the Risk Identification and Selection Collaborative (RISC) provide protocols for us to follow in WIC as new research is conducted and findings are revealed.

The Center for Disease Control and Prevention (CDC) completed a study in 2003 of growth references for Very Low Birth Weight (VLBW) infants. As a result of the study, RISC determined a few additional nutrition risk factors and provided direction for WIC to be plotting the 2000 CDC growth charts using the adjusted age for a preterm infant (i.e. an infant born at or before 37 weeks gestation), in addition to plotting for actual age.

A more accurate and consistent assessment of growth, feeding skills and developmental skills will be achieved by:

- Using new risk factors based on adjusted age, i.e. modified definitions of certain anthropometric risk criteria, and
- Plotting measurements on the 2000 CDC growth charts using adjusted age to ensure consistency and accuracy of growth assessment.

Chronological Age versus Adjusted Age

In order to discuss the chronological age versus the adjusted age of the infant, we need to define the following terms:

Full term pregnancy: A full term pregnancy is estimated to be 40 weeks from the mother's last menstrual period (38-42 weeks gestation is considered full term).

Preterm Infant: This is an infant who was born at 37 weeks or less or three weeks early from the estimated due date.

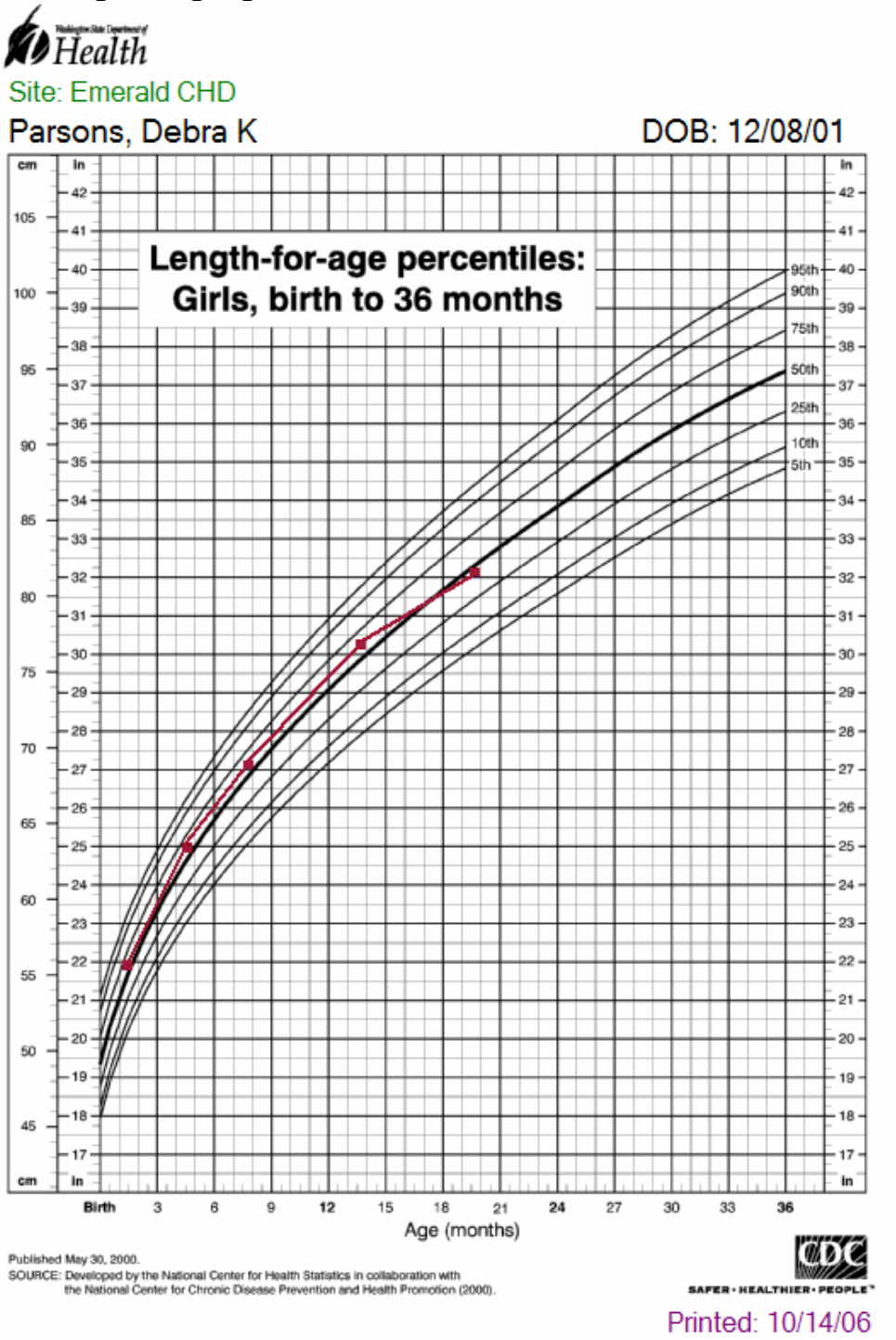
Assessment of growth, feeding skills and developmental skills for preterm infants should be based on the client's adjusted age.
Let's look at the chronological age versus the adjusted age:

Chronological age: sometimes known as actual age, is a term used to indicate the age from the actual day the child was born (i.e. An infant was born on January 1st, the chronological age of the infant today, January 8th, is one week).

Adjusted age: also known as corrected age, is based on the age the child would be if the pregnancy had actually gone to term (i.e. the mother delivered the baby near the estimated due date).
If the infant was born at 37 weeks of gestation, 37 is subtracted from 40 which means the infant was three weeks early.

2000 CDC Growth Chart Facts

Debra's length / age growth chart



Facts About the 2000 CDC Growth Charts

- Plot and assess for length for age, weight for age and head circumference for age for the infant or child up to 3 years of age.

- Read as percentiles, the solid lines are the 5th, 10th, 25th, 50th, 75th, 90th and 95th percentiles.

- Have spaces between the lines called channels.

- Majority of children fall within the 25th -75th percentiles.

- Growth between the 10th and 90th percentiles is considered normal, although, kids that plot at or below the 10th percentile are at risk of underweight and, at or above the 90th percentile are at risk of overfeeding.

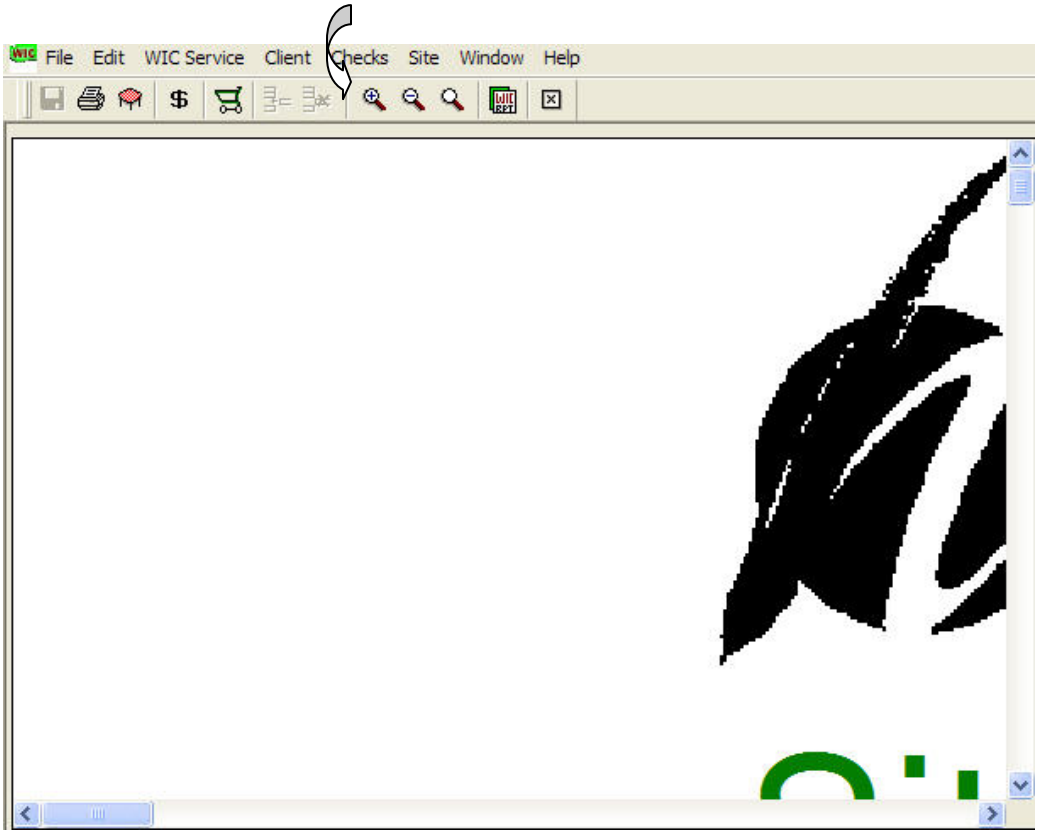
Remember that what is most important when assessing a child's growth is reviewing the pattern of growth, or many plotted measurements over time. One measurement plot doesn't tell us very much. Many plotted measurements show whether the child's pattern of growth looks appropriate or whether there may be concerns.

New Client Services functions:
If you have ever double-clicked on the growth chart to expand it, and enlarged it so much that there isn't anything but a blank screen left to view, then you will like the new functions on the menu bar. There are three new tool bar icons available for zooming in and out when viewing the graph and they remain usable at all times while viewing the graph.

Icons

 Zoom In  Zoom Out  Reset

Example of zooming in too far on the growth chart



- The graphs can now be printed by choosing:
  - File on the menu bar, and picking the "Print" selection,
  - the Print icon, or
  - the Print button on the Measures tab.

Gestational Age Field on the Custom tab

There is a Gestational Age field on the Custom tab for the number of weeks gestation to be entered for the infant and child.

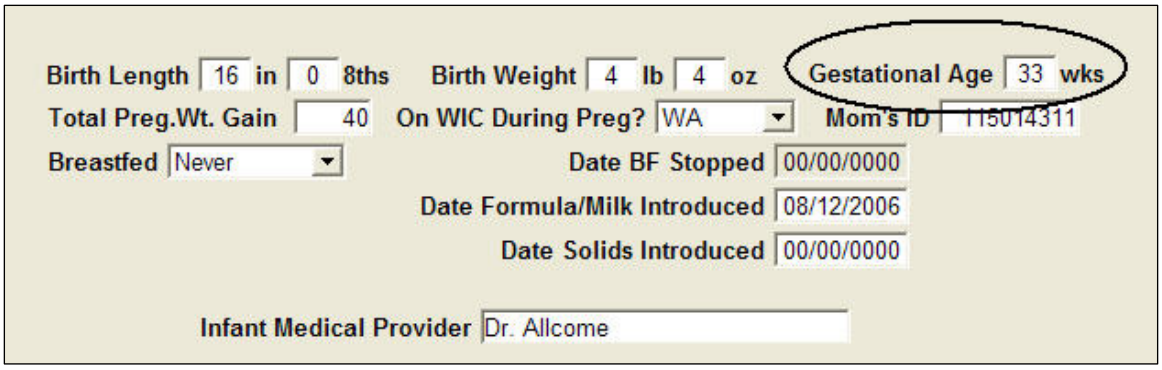
It is critical to fill in the Gestational Age field for infants and children up to 2 years of age, in order to have:

1. Growth charts plotted using both actual age and adjusted ages
2. Preterm infant and child risks assigned

Since the computer will not require you to complete this field, it is important to be thorough in collecting this information.

Once your clinic has Client Services 4.4, any preterm client who has the Gestational Age field completed will have growth charts plotted using both actual and adjusted ages and preterm nutrition risks available (when the Identify Nutrition Risks button is pushed.)

Infant Custom tab



Child Custom tab

Adjusted Age Calculated based on Gestational Age

Client Services will automatically calculate the adjusted age based on the number entered into the Gestational Age field.

If the client is a foster child and the caregiver does not know the gestational age of the infant/child, then leave the field blank and possibly as time goes by you will be able to obtain that information from the health care provider. Or if you learn from a health care provider or another source that the child is preterm, manually select the risk "Premature ≤ 37 weeks of age".

When you *recertify* an infant to a child, the gestational age will carry forward if it was entered into the infant Custom tab.

Remember for every new child or existing child less than 2 years of age, it will also be important to enter the gestational age on the child's Custom tab in order to get preterm growth plotting and/or preterm nutrition risks.

Obtaining Gestational Age Information

To obtain information about the number of weeks gestation:

- the caregiver can self-report, or
- staff may obtain information from the medical provider.

A question to ask the caregiver when they are self-reporting the gestational age of the infant, is "**Compared to your due date, was your baby born on time?**"

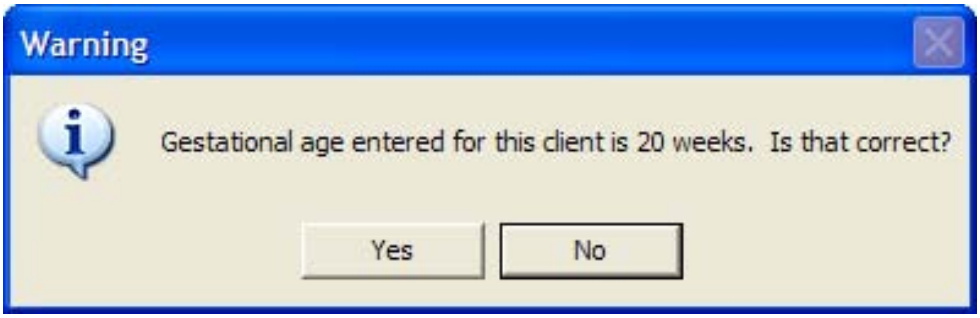
To increase the accuracy of this response, reflect back to the caregiver what you heard. "So your baby was 3 weeks early." Caregivers may also report this information by giving you the number of weeks gestation, "my baby was born at 37 weeks gestation".

In Client Services, if a value of less than 24 weeks or greater than 43 weeks is entered into the Gestational Age field on the Custom tab, a

pop-up message will alert you that the number of weeks entered into the Custom tab is out of the normal range.

The accuracy of the number of weeks gestation is just as important as accurate anthropometric measurements for assessing the preterm infant's growth, development, and feeding.

If the number of weeks entered is correct, press the "yes" button within the pop-up message box and continue on with the assessment.



Birth Weight Entered on the Custom Tab

Another cue to help increase accuracy is a pop-up message for birth weight entered into the Custom tab for an infant or child. If the birth weight is out of the expected range for the number of weeks gestation, a pop up box will appear asking you to verify the birth weight entered is correct.

Calculation for Gestational Age

Gestational age is calculated by subtracting the number of weeks premature from 40 weeks (which is full term for pregnancy). Refer to the table on the next page.

Example:

40 weeks – 7 weeks = 33 weeks
(full term) (weeks early) (gestational age)

Adjusted Age Table

40 weeks - _____ = _____
Weeks Early Gestational Age

Weeks Early	Gestational Age
1	39 weeks
2	38 weeks
3	37 weeks
4	36 weeks
5	35 weeks
6	34 weeks
7	33 weeks
8	32 weeks
9	31 weeks
10	30 weeks
11	29 weeks
12	28 weeks
13	27 weeks
14	26 weeks
15	25 weeks
16	24 weeks
17	23 weeks
18	22 weeks
19	21 weeks

Scenario 1

Cassie is in your office today with her daughter, Jackie, for a New Cert. To complete the field for gestational age on the Custom tab, you ask Cassie, "Cassie, compared to your due date, was Jackie born on time?" Cassie tells you she was having some medical difficulties and her pregnancy and Jackie was born 4 weeks early.

With the table on the previous page, use the equation and figure out the weeks gestation. How many weeks is a normal pregnancy?

What is Jackie's gestational age?

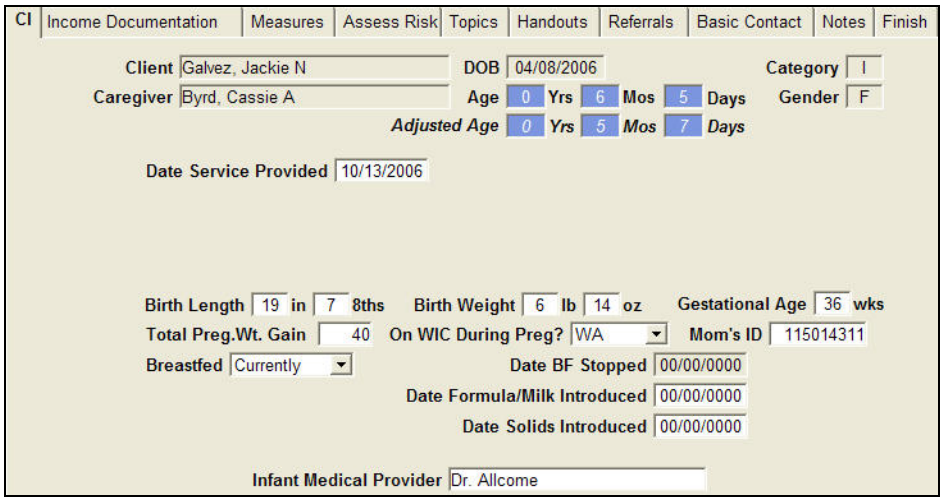
To make sure you have accurate information, you restate what you heard, "So Jackie was born at 36 weeks gestation, or four weeks early." After affirmation, you enter the weeks into the gestational age field on the Custom tab.

<u>At this point, Client Services will do the rest of the calculation to find Jackie's adjusted age.</u>

Scenario 2

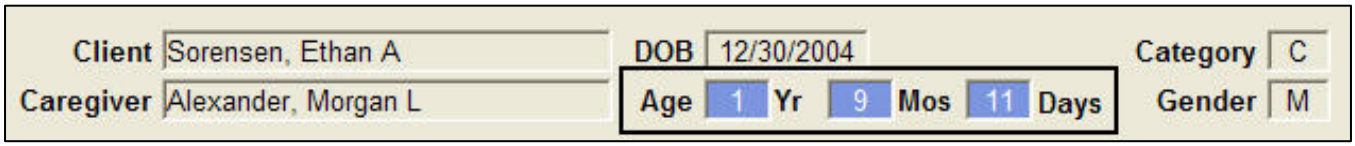
Cassie and Jackie are in the office today, approximately 6 months after Jackie was born.

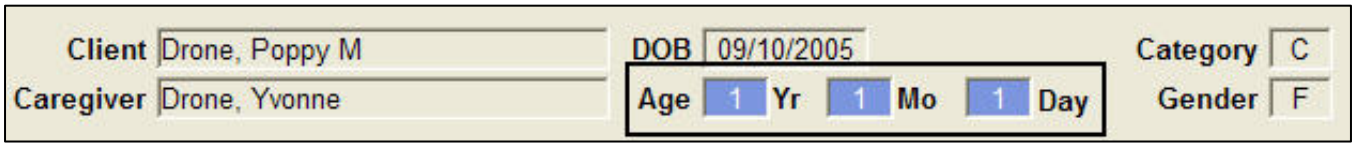
Custom Tab



Display of the Child's Age

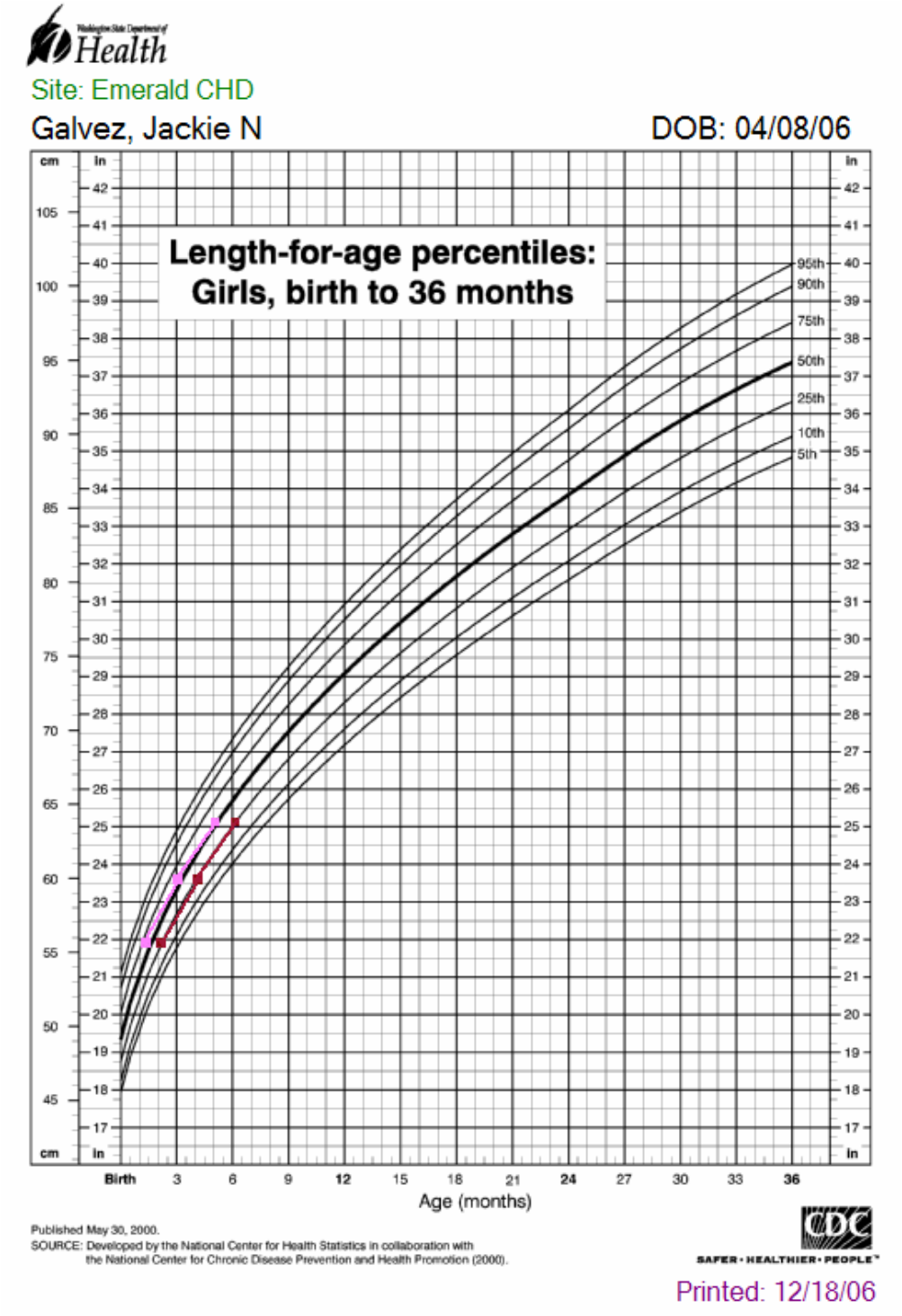
- Adjusted age will display if the child's gestational age is equal to or less than 37 weeks gestation (37 weeks or less being the defined cutoff for premature).
- Adjusted age for preterm infants and children show on most Client Services screens where age is displayed, with the exception of the Checks screens.
- Both age displays use correct grammar for the year, month and day or days as appropriate (i.e. if more than one, displays years, mos and days.



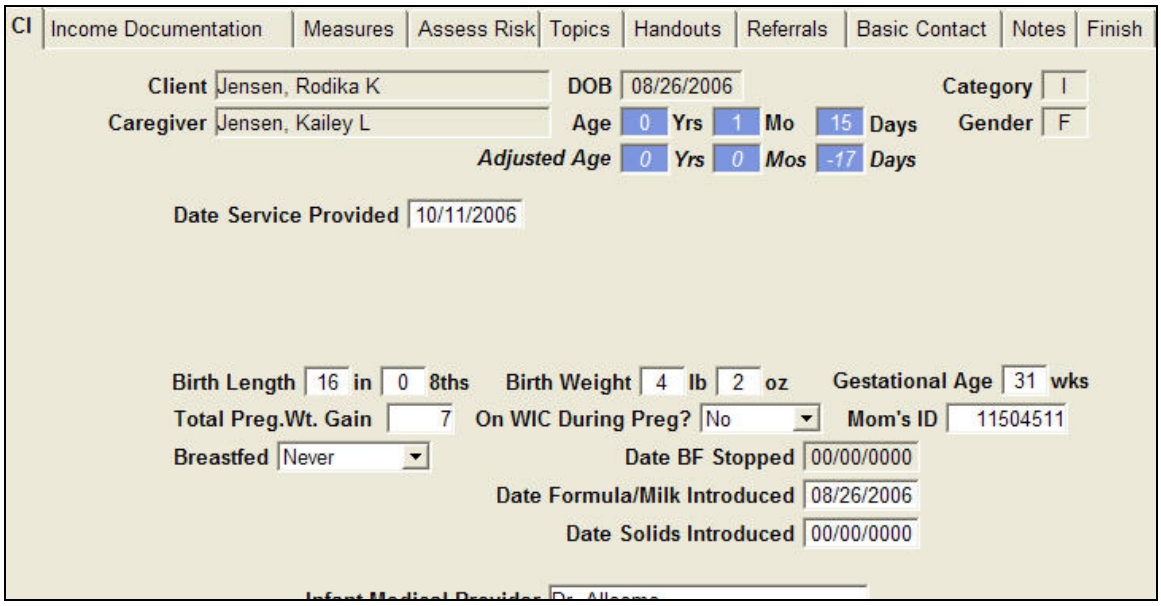


- Age calculated in Client Services is very accurate…to the day
- Adjusted age will display up to 2 years of age (chronological age) for children born preterm.
- Children 2 years and older will continue to have their age displayed in years and months (as in the previous version, Version 4.3).

Now let's take a sneak preview of the adjusted age plotted on the growth chart by looking at Jackie's growth chart.

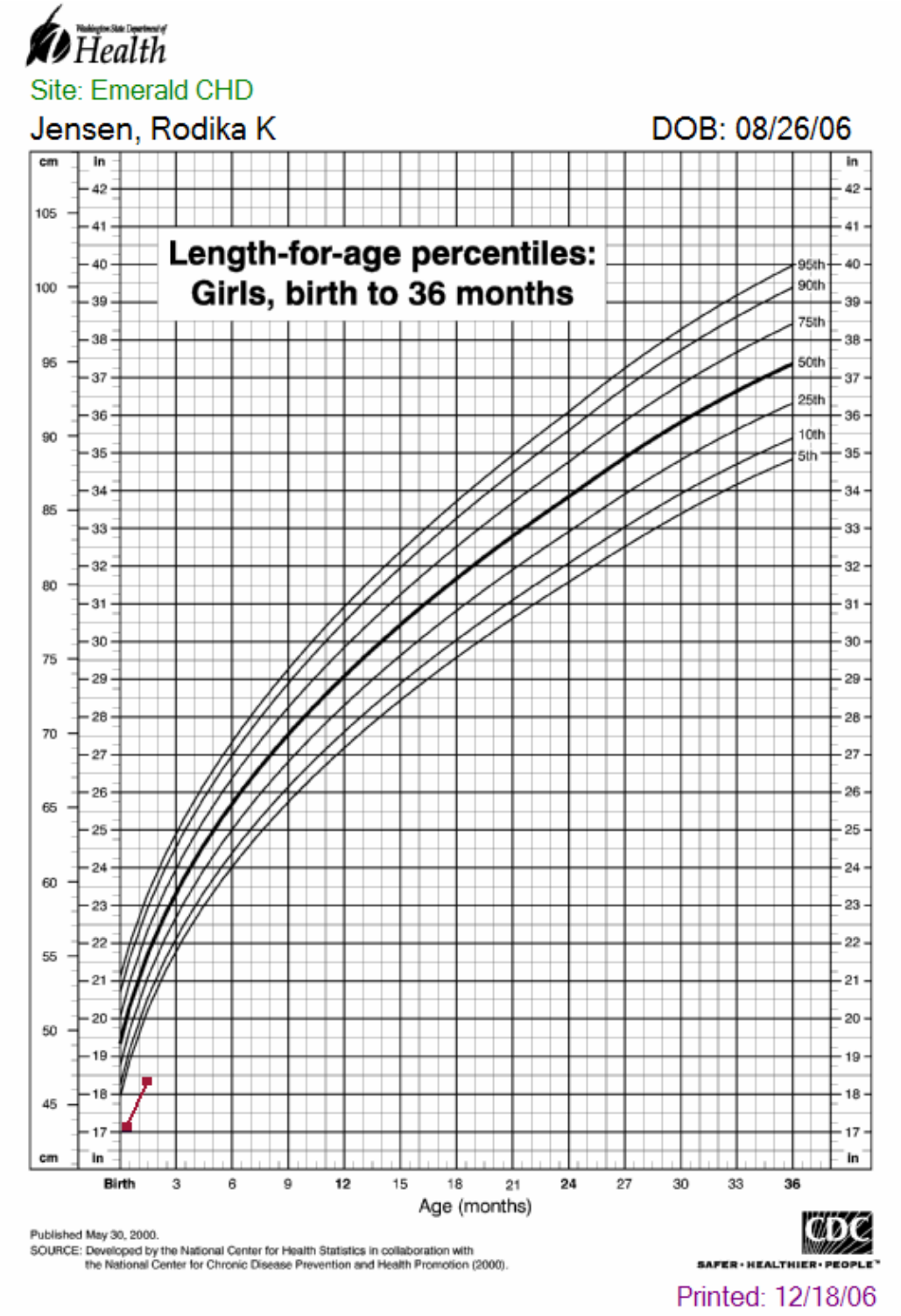


Custom Tab



The Adjusted Age for Rodika is -17 days. If you look at Rodika's mom's expected due date, Rodika would not be born for three more weeks. She is being seen in the WIC clinic 17 days before her expected due date.

Rodika's Length/Age Growth Chart



Plotting Measurements using Adjusted Age on the Growth Charts

Adjusted age will plot on the growth charts in Client Services:

- Only when "Gestational Age" of 37 weeks or less is entered into the Custom tab (for both infant and child).
- Plotting (for adjusted age) begins when the preterm infant reaches their estimated due date. So in Rodika's case, she has another 3 weeks (17 days) before the measurements would be plotted on the growth chart.
- For infants and children up to 2 years of age (chronological).

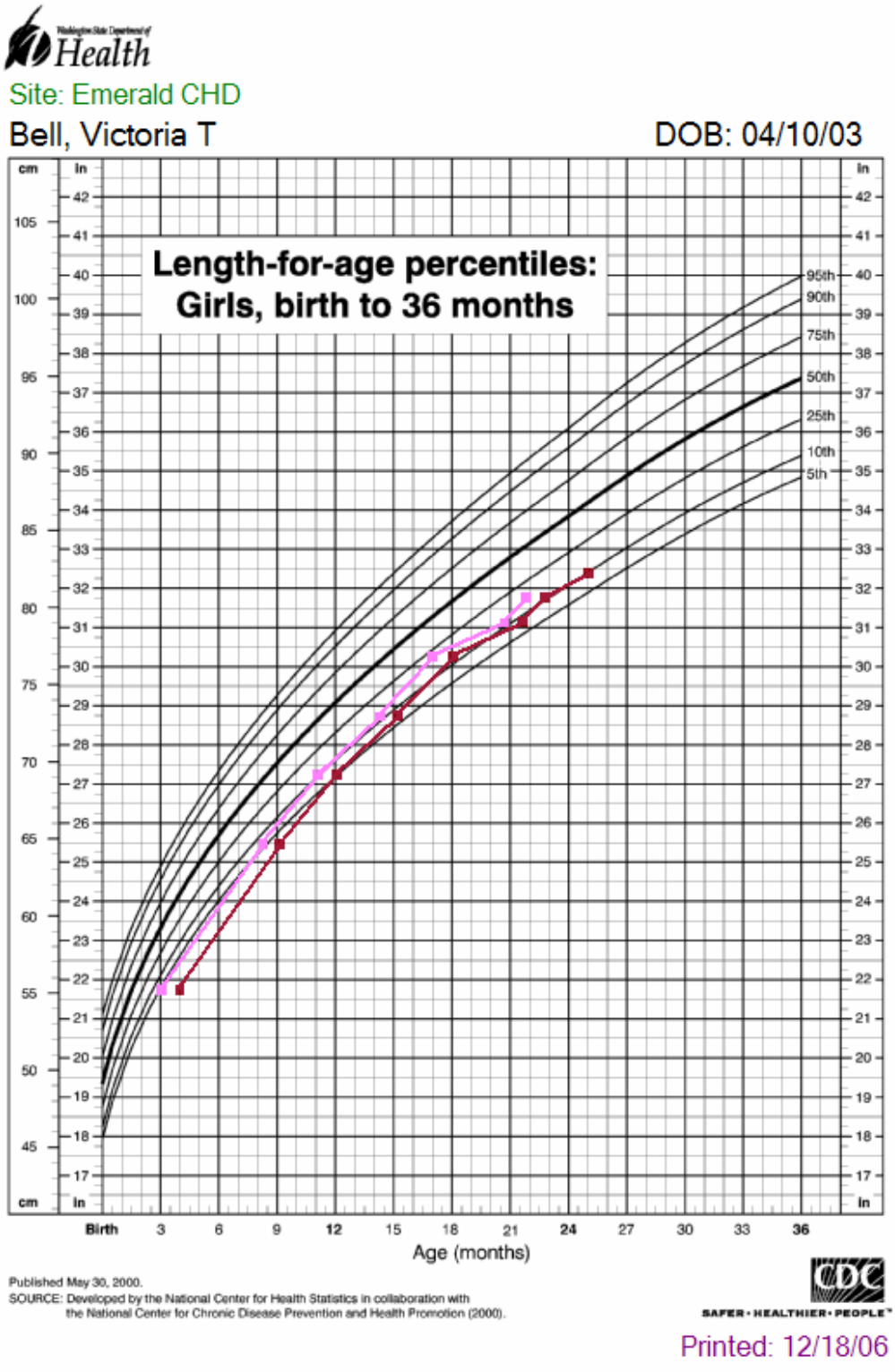
Measurements plotted using adjusted age:

- Parallel a similar curve as the measurements plotted for chronological age
- Plots in light blue for boys and light pink for girls
- For Length/Age, Weight/Age and Head Circumference/Age (same as plotting measurements using chronological age)

Remember:

- Only measurements taken after their estimated due date (greater than 40 weeks gestation) will plot on the Client Services growth charts
- Plotting based on adjusted age will stop when the child turns 2 years old (chronological age).

Victoria's Length/Age Growth Chart



Why Doesn't WIC Use Preterm Growth Charts?

- USDA requires WIC to use the 2000 CDC growth charts and plot measurements using adjusted age.
- There are a number of growth charts available for assessing growth of preterm infants, i.e.; Fenton, Babson, Infant Health and Development Program (IHDP).
- Risk eligibility for preterm infants and children is based *only* on the 2000 CDC growth charts using adjusted age plots.

Additional preterm growth chart information is available:

- Reference and Resource List in the Appendix, and
- Preterm video- Preterm Infants: Growth Assessment and Feeding by Joan Zerzan, MS, RD, CD – Abbreviated Version"
- Nutrition Practice Care Guidelines for Preterm Infants in the Community- Revised August 2006- reprinted from Oregon State.

Interpreting Growth Using Chronological Age and Adjusted Age

Preterm Video-1st segment

- PowerPoint slide handouts are *not* available for the abbreviated version of the Preterm Video.
- Client photographs shown in the original presentation have been replaced with generic child photographs to protect the clients' privacy.

Risk Factor Changes in Client Services 4.4

Reference: Volume 1, Chapter 14 – Nutrition Risk Criteria

The preterm risk factors listed on the next page are auto calculated. The premature and adjusted age growth risks will be auto assigned only if the infant's or child's:

- gestational age is $\leq$ 37 weeks
- gestational age has been entered on the Custom tab
- age is less than two years old (chronological age)

Remember, these new risks will only be assigned when staff press the Identify New Risks button on the Measures tab.

Helpful Tips:

- Since Client Services has not calculated preterm risks for children before, it is important to enter the gestational age on the child's Custom tab up until the child reaches 2 years of age.

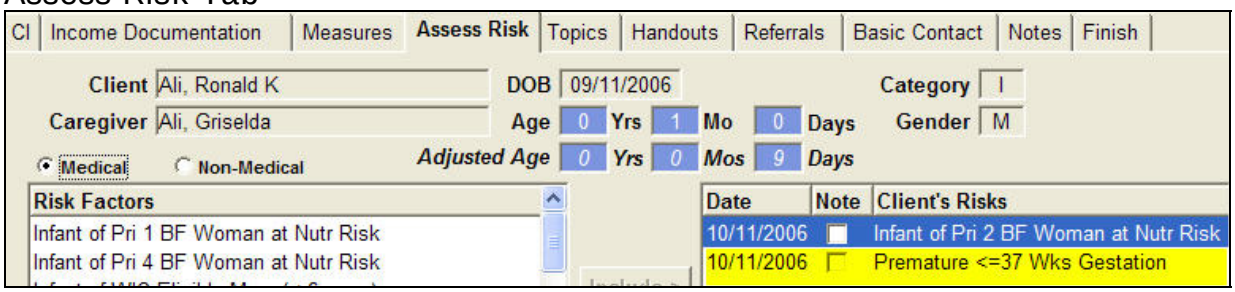
- If you recertify an infant to a child, the gestational age will carry forward if it was entered into the infant's Custom tab prior to the recertification.

Premature ≤ 37 weeks gestation (<2 yrs.)

- This risk is automatically assigned for clients born at 37 weeks gestation or less, documented in the Custom tab.

- Preterm infants *and* children up to 2 years old (chronological age) will be assigned this risk. The risk is auto assigned when the number of weeks gestation entered into the Custom tab is 37 weeks or less.

Assess Risk Tab



Very Low Birth Weight ≤ 3 pounds 5 ounces (Infants only)

In Client Services, infants born at 3 pounds 5 ounces or less are assigned this risk factor.

This risk factor is considered high risk and is automatically assigned based on the birth weight entered into the Custom tab.

Assess Risk Tab

Adjusted Age Determined Risks

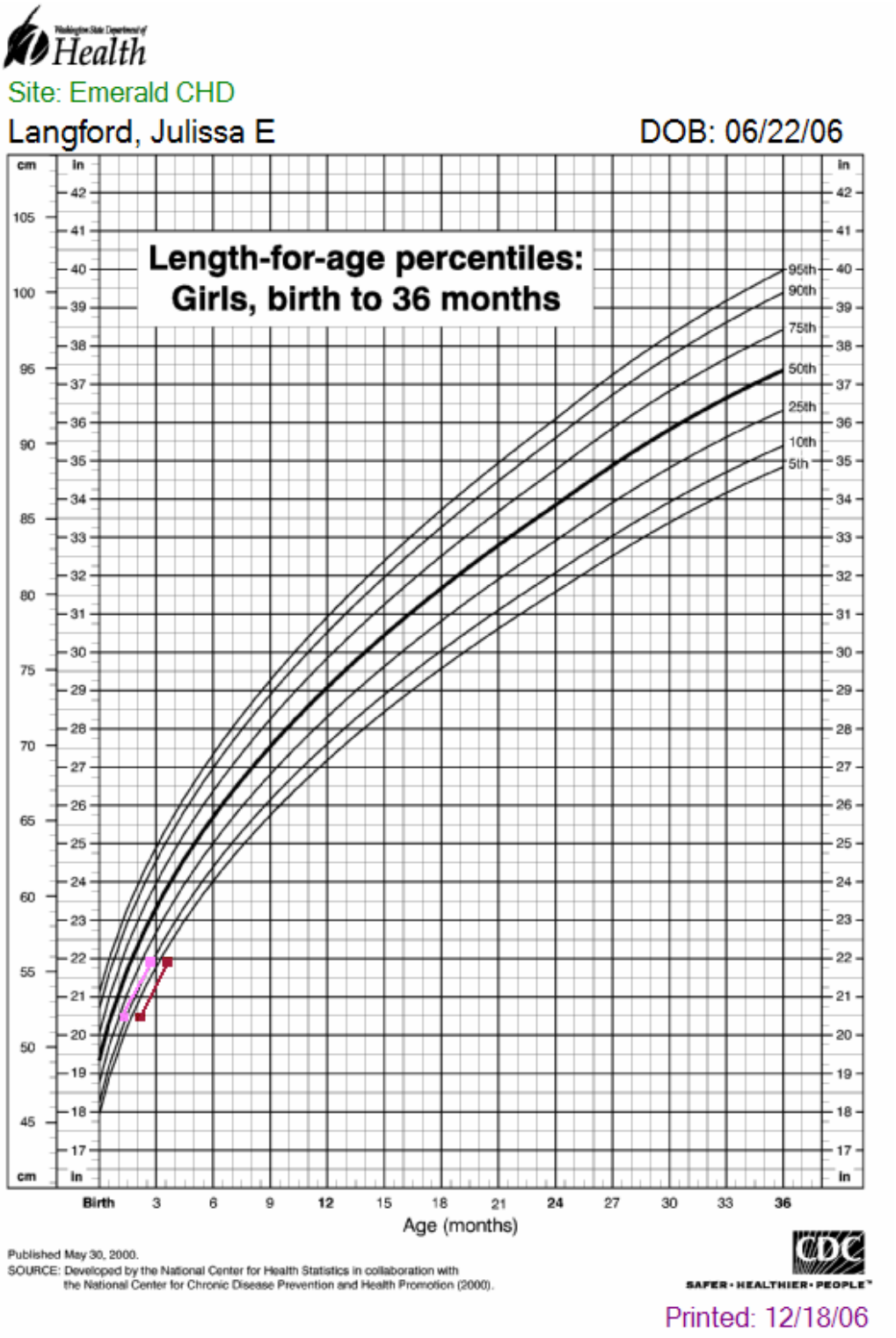
The following risks are based on *adjusted age* for determination of:

- Length/Adjusted Age $\leq 5^{th}$ (<2 yrs)
- Length/Adjusted Age $\leq 10^{th}$ (< 2 yrs)
- Head Circumference/Age $< 5^{th}$ (Infants only)

Length/Adjusted Age ≤ 5th (<2 yrs.)
Length/Adjusted Age ≤ 10th (<2 yrs.)

For preterm infants and children less than 2 years of chronological age, Client Services plots length measurements by both adjusted age and chronological age on the Length/Age growth chart. When measurements plotted with adjusted age are available, these are the measurements used to determine this risk.

Julissa's Length/Age Growth Chart Plotted Using Both Ages



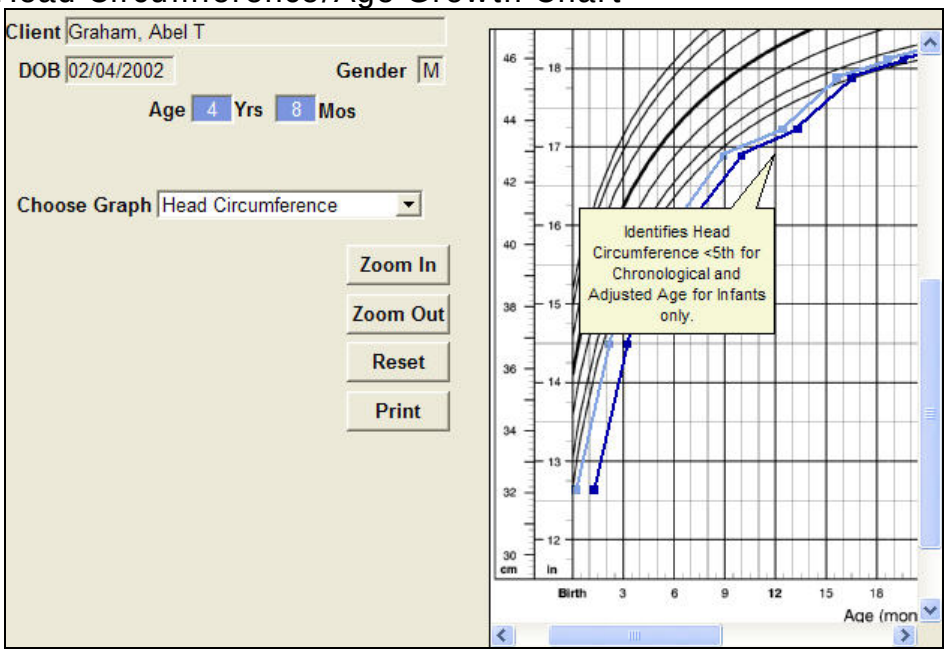
In Julissa's chart, the chronological age plot (in red) is below the 5th percentile length for age. In the past, a risk would be determined based on this plot; however, the adjusted age plot (in pink) is above the 10th percentile. This client will not be assigned a risk related to her length, however, she will be assigned the risk "Premature ≤37 weeks gestation".

Assess Risk Tab

Head Circumference / Adjusted Age < 5th (Infants only)

Like length, Client Service plots head circumference measurements on the growth chart by both adjusted age and chronological age for preterm infants (when head circumference is entered).

Head Circumference/Age Growth Chart

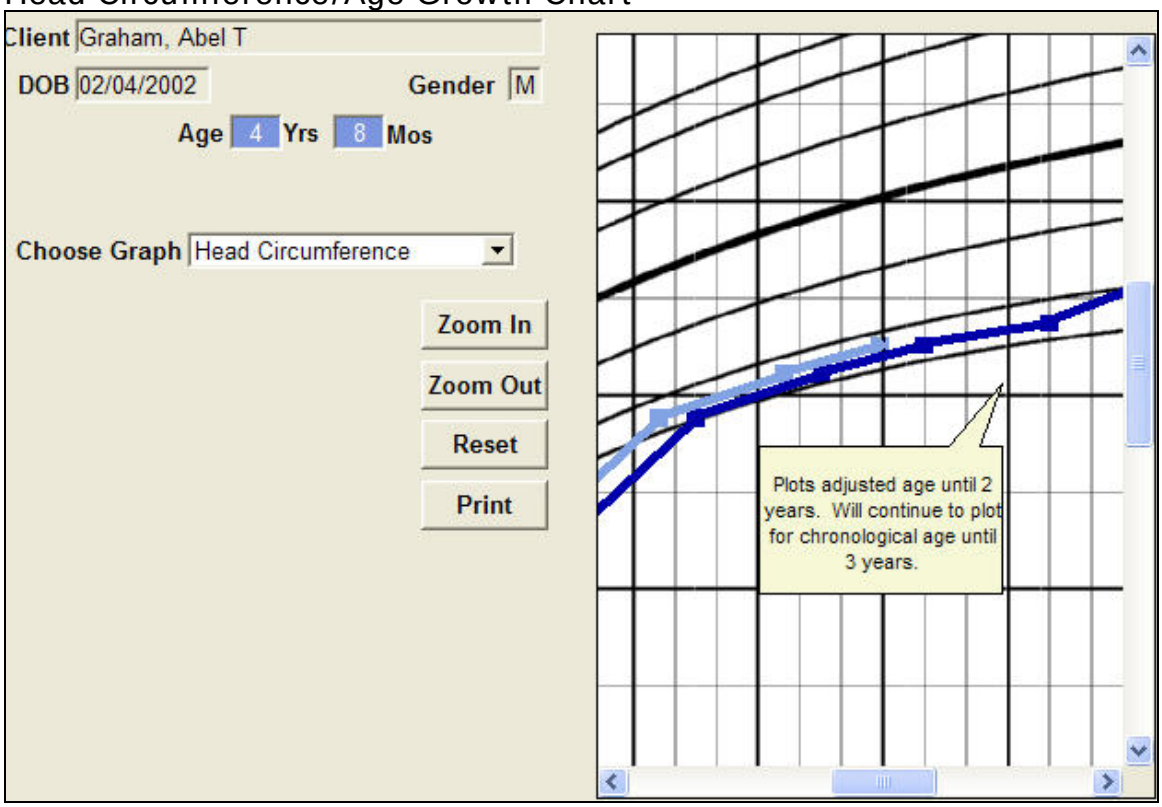


- Client Service will use only the adjusted age measures to determine risk eligibility for preterm infants and children up to 2 years of age (chronological).

- Plotting measurements on the growth chart for the adjusted age will begin once the infant has reached their estimated due date. The graph will continue to plot for both chronological age and adjusted age until age 2 (chronological age).

- Plotting head circumference measurements for chronological age will continue up to the age 3, as in previous versions.

Head Circumference/Age Growth Chart



If the infant's adjusted age is a negative number at the time of measurement:

- the growth chart will not be plotted for adjusted age and

- Client Services will not assign growth related risks until the infant measurements are plotted on the graphs after their estimated due date.

4.4 and More...

The following is a table which provides some clarity to current risks, changed risks, and new risks:

Medical Risks Changes

(Based on gestational age, growth and birth weight)

Current Risks	Changed Risks	High Risk
Premature ≤ 37 Weeks Gestation (Infants only)	Premature ≤37 Weeks gestation (< 2 yrs.) (Infants, Children)	
Length/Age ≤ 5th (Infants, Children)	Length/Age ≤ 5th (Infants, Children) Length/Adjusted Age ≤ 5th (Infants, Children < 2 yrs.)	
Length/Age ≤ 10th (Infants, Children)	Length/Age ≤ 10th (Infants, Children) Length/Adjusted Age ≤ 10th (Infants, Children < 2 yrs.)	
Head Circumference/Age < 5th (Infants only)	Head Circumference/Age < 5th (Infants only) Head Circumference/Adjusted Age < 5th (Infants only)	
Weight/Length ≤ 5th		**X**
Weight/Length ≤ 10th (Infants, Children)		
Weight/Length ≥ 95th (Children 24 – 36 months)		**X**
	Very Low Birth Weight ≤ 3 lb. 5 oz. (Infants only)	**X**
Low Birth Weight ≤ 5 lbs., 8 oz (<6 mos.)		**X**
Low Birth Weight ≤ 5lbs., 8 oz (≥ 6 mos.)		
Low Birth Weight ≤ 5lbs., 8 oz (< 2 yrs.)		

Note: Slow Weight Gain and BMI/Age risks did not change so are not shown.

Communication about growth

Caregivers often want to hear about how their child is growing. This is especially true for caregivers with preterm infants who may have more concerns about their child's growth and may need more reassurance.

Remember the intent of sharing growth information with the caregivers is to help them know how their child is growing and if there are any concerns, to be able to address them early.

Let's take a look at the next page, Communicating About Growth with Caregivers handout.

COMMUNICATING ABOUT GROWTH WITH CAREGIVERS:

1. During the WIC visit, you are working to **develop a relationship** with the caregiver so she feels comfortable and develops trust in you as a WIC provider.

   a) Begin with something **positive and specific** about the child and/or the parent-child interaction. Show that you **really care** about the family.

   "You do a great job caring for your baby." or "You seem comfortable caring for your little one." or "You are very responsive to your baby's needs."

   b) These **affirmations** can be wonderful rapport builders. For some clients, affirmations are a rare commodity. Be sure that the comments are **genuine and sincere.**

2. **Ask if the parent or others have any concerns with the baby's growth.**

   - Has anyone been concerned about your child's growth?
   - Have you been concerned?
   - When did that concern begin?
   - What do you think has contributed to it? (i.e. baby was sick)

   Use reflective listening to show you have heard what the client is saying about her or others' concerns about the baby's growth. Try to **reflect** her words and meaning (your perceptions) back to her:

   "Your mother is concerned about Kayla's growth." or "You are worried about Kayla's growth and not sure if she is growing like she should be growing."

3. **Ask for permission** to share the growth charts with the caregiver.

   "Would you like to see how your baby is growing as shown on the growth charts?" or "The computer has plotted your baby's measurements on the growth charts, would you like to see them?"

4. **Provide brief description** of growth interpretation to caregiver.

   "For preterm infants/children, the computer plots the length and weight two times: one using your child's **actual age** and one using what we call an **"adjusted age",** The adjusted age means we have calculated what your child's age would have been had she been full term (that is, was carried the full term of your pregnancy). Have you heard this before?"

   "Kayla is 1-1/2 months old today, but because she was born 4 weeks early, her adjusted age is 2 weeks old.

   "Although the computer plots her measurements for both ages, the one we want to focus on is for her adjusted age. On the length/age chart, and looking at her length for her adjusted age - Kayla is growing at the 10^{th} percentile. This means out of 100 girls who are 2 weeks old, 90 would be longer than Kayla and 9 would be shorter. "

   "However the most important thing is Kayla's **rate of growth,** not the percentile. So each time we measure and weigh Kayla at WIC, we will be looking at her rate of growth to ensure she is growing well. Now let's look at her weight for age...."

5. After sharing information about the three growth charts (length/age, weight/age and weight/length), **ask "what questions do you have?"**

Communication Activity:

- Find a partner
- Use the growth chart for Victoria or Julissa

One of you is the caregiver and one is the WIC certifier.

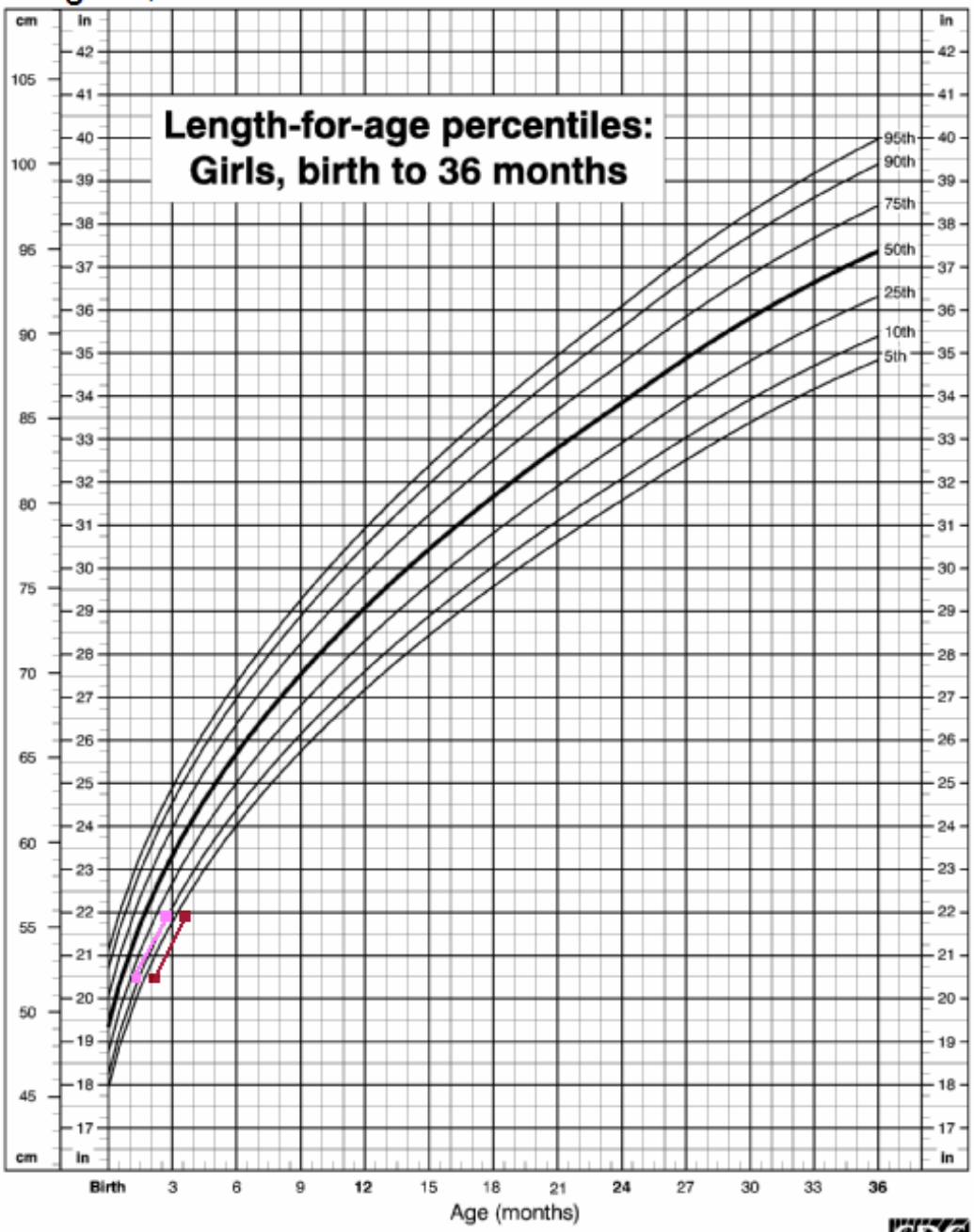
Taking into account all the information you have just seen and heard, this activity is to help you establish rapport and explain the growth chart to the caregiver.

We will switch roles in about 5 minutes.

Health

Site: Emerald CHD

Langford, Julissa E DOB: 06/22/06



Published May 30, 2000.
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).

CDC
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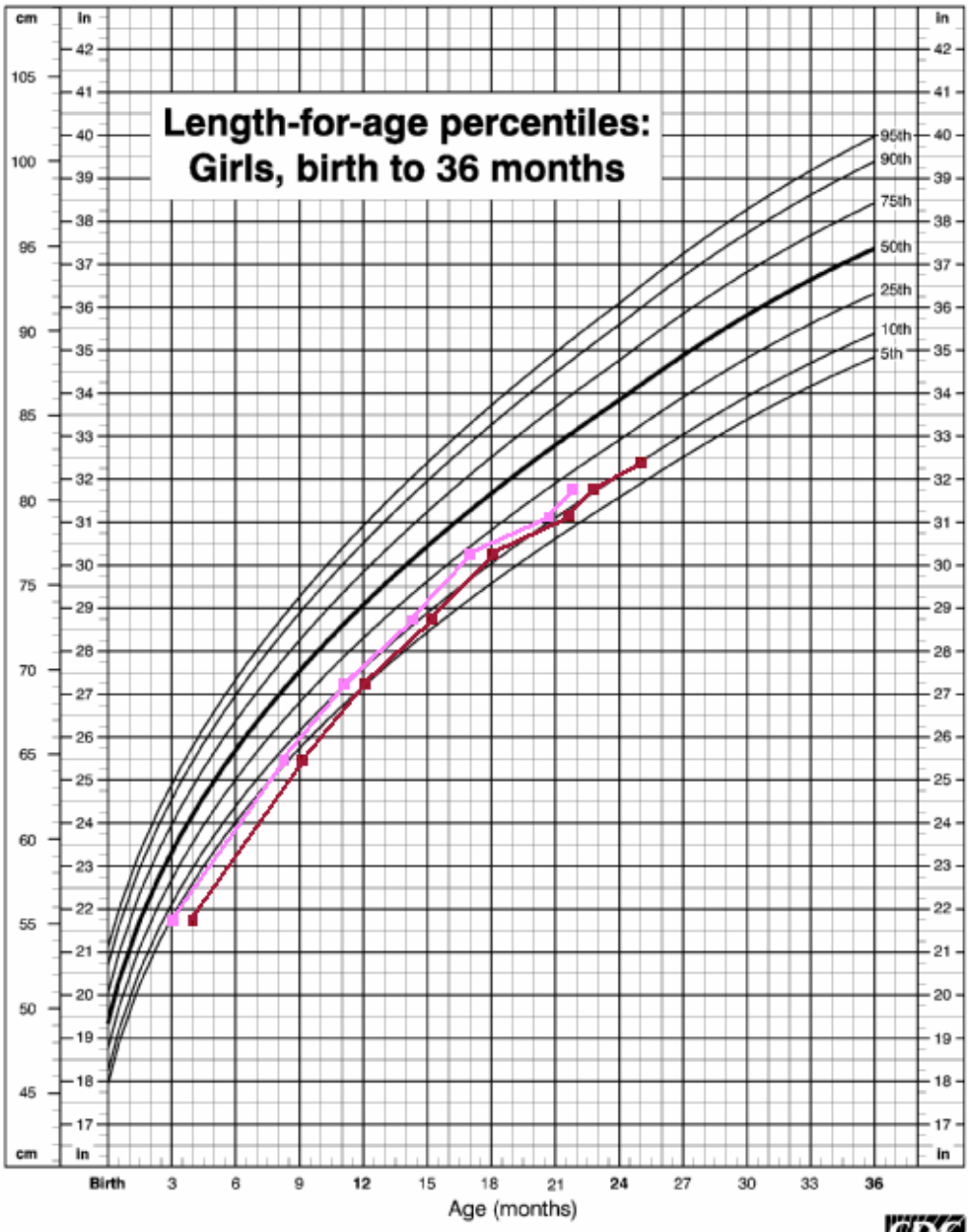
Printed: 12/18/06

Site: Emerald CHD

Bell, Victoria T DOB: 04/10/03



Published May 30, 2000.
SOURCE: Developed by the National Center for Health Statistics in collaboration with the National Center for Chronic Disease Prevention and Health Promotion (2000).

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Printed: 12/18/06

AND MORE...(Other Changes in Client Services 4.4)

Certification Encounter, Certification History and High Risk Care Plan Reports

Anthropometric Table

Objective:

Male
DOB: 08/04/2005
Age At Certification: 11 months 13 days
Gestational Age: 37 wks
Adjusted Age at Certification: 10 months 22 days

Birth Weight: 6 lbs 9 ozs
Birth Length: 18 0/8 in
Breastfeeding: Stopped
Date Stopped BF: 1/5/2006

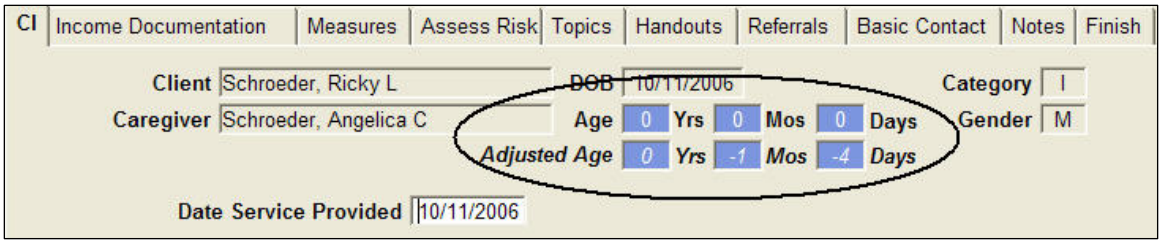
Date of Measure	Length / Height	Ln / Age %ile	*Ln / Adj Age %ile*	Weight	Wt / Age %ile	*Wt / Adj Age %ile*	Wt / Ln %ile	BMI	BMI / Age %ile	Hct %	Hgb g/dl
07/17/2006	L 28 2/8 in	13.47%	*21.28%*	21 # 12 oz	40.36%	*48.34%*	89.97%				11.0

Rules for Adjusted Age in Reports

The following rules apply for the Certification Encounter Report, the Certification History Report and the High Risk Care Plan Report:

- If either age (chronological or adjusted) is zero (for year, month, and day), the field under the Objectives in the report will say Birth.

Custom Tab



Report shows:

Client: Schroeder, Ricky L.
Caregiver: Schroeder, Angelica C

Address: 12800 Park Avenue, Apt 113
Lacey, WA 98503

Phone: (360) 555-1234
Msg Phone: (555) 123-4
Med Provider:

Objective:
Male
DOB: 10/11/2006
Age At Certification: Birth
Gestational Age: 35 wks
Adjusted Age at Certification: -1 month -4 days

- If the adjusted age at the Certification shows negative numbers, the negative age will display for Adjusted Age at Certification in the Objectives section.

Objective:
Male
DOB: 08/02/2006
Age At Certification: 30 days
Gestational Age: 31 wks
Adjusted Age at Certification: -1 month -3 days

Birth Weight: 4 lbs 3 ozs
Birth Length: 17 1/8 in
Breastfeeding: Currently
Date Stopped BF:
Date Form/Milk Began:
Date Solids Began:

Date of Measure	Length / Height	Ln / Age %ile	*Ln / Adj Age %ile*	Weight	Wt / Age %ile	*Wt / Adj Age %ile*	Wt / Ln %ile	BMI	BMI / Age %ile	Hct %	Hgb g/dl
09/01/2006	L 18 3/8 in	0.04%	*N/A*	5 # 2 oz	0.11%	*N/A*	19.98%				
08/02/2006	L 17 1/8 in	0.82%	*N/A*	4 # 3 oz	0.73%	*N/A*					

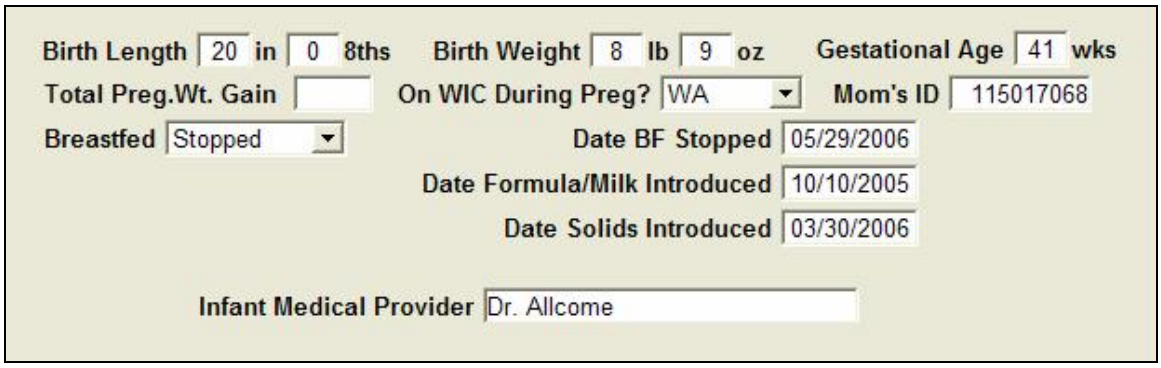
- The adjusted age percentages in the table will say “N/A” (not applicable) when:
  - the adjusted age is negative at the time of the measurement.
  - the infant is born over 37 weeks gestation.
  - the child is over 2 years old or more at the time of certification.

If the last measurement is taken before 2 years of age, the adjusted age percentiles will show in the table for the report and will continue to show until another measurement is documented, even if the child is over two years old.

Child's Custom Tab-Breastfeeding Information

The Breastfeeding status and the Date BF Stopped on the infant's Custom tab will now carry forward to the child's Custom tab when the infant is recertified as a child. Breastfeeding data is taken from these fields for the breastfeeding report. The report data will only be as good as the information that is entered into Client Services, so be sure to complete these fields.

Infant Custom Tab



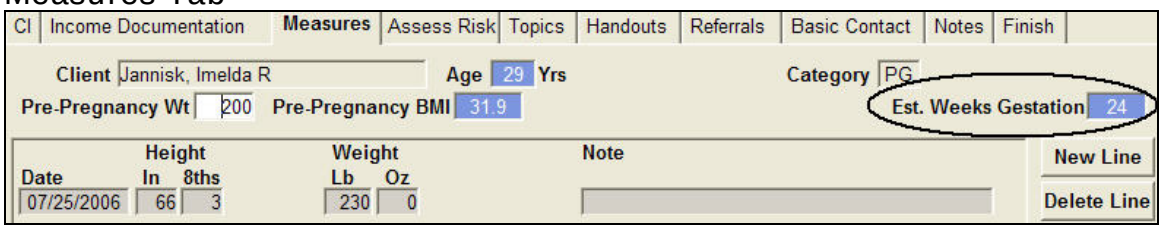
Child Custom Tab

Estimated Weeks of Gestation

The Measures tab for pregnant women now shows the Estimated Weeks Gestation.

- This field is a display only and cannot be edited.
- The weeks are calculated by using the information entered into the Due Date on the Custom tab for the pregnant woman.
- If you change the due date, the Est. Weeks Gestation will update once the wizard is closed.

Measures Tab



Note:
If the woman's due date is today, the Est Weeks Gestation will show as "40".

If the due date was yesterday, the Est Weeks Gestation will show "N/A" (not applicable)

A table resides in the HRCP Report which identifies the weeks of gestation.

OBJECTIVE

Age at HRCP: 24
Pre-Pregnancy Weight: 135 lbs 0 oz
Pre-Pregnancy BMI: 21.6
Height: 66 2/8 in. taken 03/20/2006
(used for computing Pre-Pregnancy BMI)

Date of Measure	Weight	Weight Gain	Weeks Gestation	Hct %	Hgb g/dl
04/18/2006	150 lbs 0 oz	15 lbs	12		
03/20/2006	143 lbs 0 oz	8 lbs	8		14.2

Meds: ☒ PN Vitamins ☐ Iron ☐ Minerals ☐ Other
Meds Note:
Diet Assessment Done: ○ No ○ Yes

Prenatal Weight Gain Grid

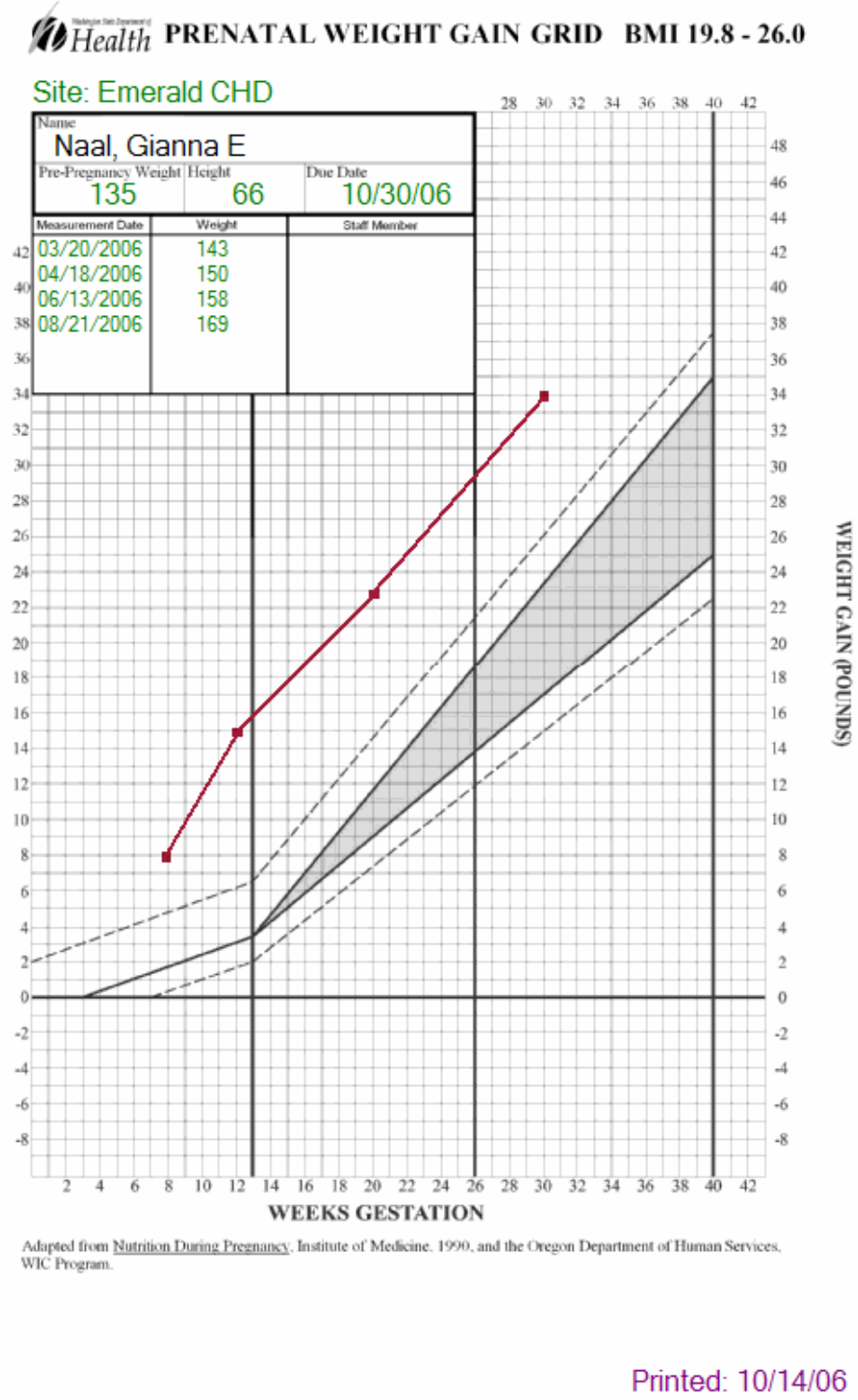
A table added to the pregnant woman's weight gain grid now displays:

- the *date* the weight measurement was taken,
- the *weight,*
- and a *space* for staff signature when the graph is printed.

The table will only display a maximum of five weight measurements.

- If you have more than five entries, the table will be blank. However, the plotting on the weight gain grid will continue to be available to view and print.

Gianna's Prenatal Weight Gain Grid



Recertifying the Woman

A bug in Client Services caused information to carry forward from a previous certification, making the recertification information inaccurate. The following scenario provides an example of when this might happen:

A pregnant woman on your WIC program transfers out of your clinic, but returns a year later. During the year she was away, she miscarried the baby she was carrying when she was originally on your program and, she has since had another baby. She is back in your office today to be put on the program as BF. In previous versions, the information from the first pregnancy would transfer to the BF certification, even though that information was not related to her current infant.

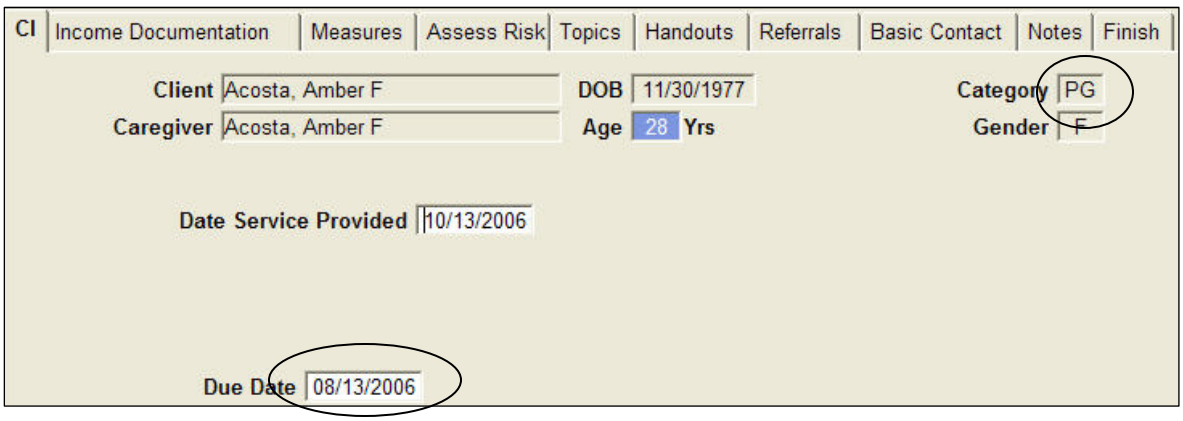
A new pop-up message will squash that bug!

Now, recertifying a woman for breastfeeding or postpartum will carry forward relevant information (pre-pregnancy weights and risks) depending on how you respond to the new pop-up message.

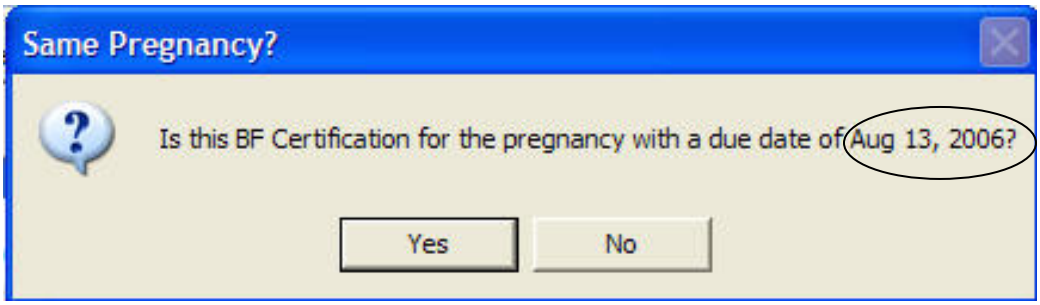
Pregnant to Breastfeeding / PP
(please follow the sequence of events)

Amber was due on 8-13-06

Custom Tab



If this is Amber's first BF or PP recert following her PG certification, you will receive a pop-up message; how you respond will effect what Client Services carries forward.



If you select "Yes" then:

- the pre-pregnancy weight will carry forward from the PG certification
- the following risk factors will carry forward to the new certification if they relate to the category and PG certification:
  - Multiple fetuses
  - Gestational Diabetes
  - 2 Preg/2 Years
  - ≤17 Years at Conception

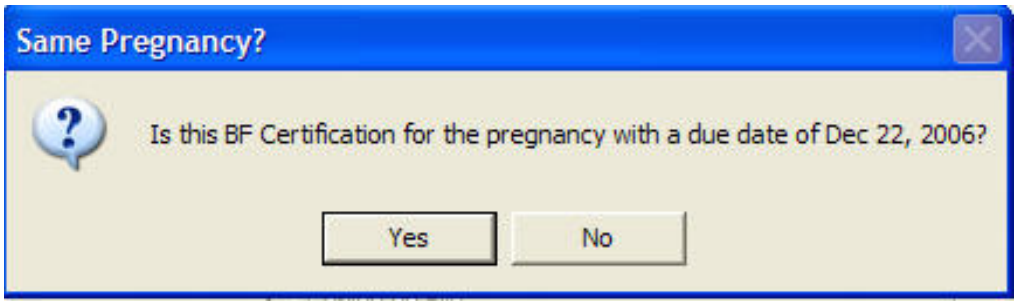
If you select "No" it means:

- You are recertifying this woman based on a different pregnancy.
- No data will be brought forward from a previous certification.

Note: If you begin an RC in Process, you will be unable to leave the Custom tab until the delivery date field is completed. If front-line staff normally begin the certification, then have them go only as far as entering the income. The RC in Process will require a delivery date before finishing.

Breastfeeding to Breastfeeding

If this is the second BF recert, you will receive a pop-up message which will effect what Client Services will complete for you.

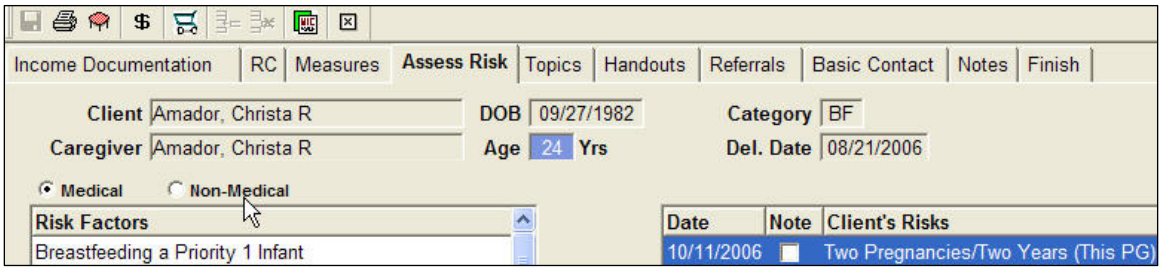


If you select "Yes" then:

- the delivery date, the pre-pregnancy weight and the weight gained during pregnancy will automatically fill using the previous BF certification information.

- the following BF risk factors from the previous certification will carry forward if they apply to the client:
  - Multiple fetuses
  - Gestational Diabetes
  - 2 Preg/2 Years
  - ≤17 Years at Conception
  - High Weight Gain (This preg.)

Assess Risk Tab



If you select "No" it means:

- You are recertifying this woman based on a different pregnancy.
- No data will be brought forward from a previous certification.

APPENDIX

Accurate Weighing and Measuring Procedures

- For anthropometric measurements to be valid indices of growth status in the preterm infant, they must be highly accurate, requiring precision in the measuring technique.

- New anthropometric policy changes were provided in a memo in 2003, but have not come out in policy format until now in Volume 1, Chapter 9.

  For infants and children Birth – 24 months of age:
  - May weigh with dry diaper and/or underclothes
  - Still have option to undress completely; this may be appropriate for more fragile infants/children

  For Older Kids, 2-5 years of age:
  - May weigh with dry diaper (2-3 years old)
  - Weigh in underclothes and/or light clothing
  - Balance privacy needs and accurate measurements!

  This is a good time to review weighing and measuring practices within your clinics.

  - Review Volume 1, Chapter 9, Anthropometrics
  - Review Volume 1, Chapter 18, page 11; provides direction for what to do when a child, who is medically fragile, is unable to be present for measurements.
  - The HRSA (Health Resources Services Administration) provides an on-line training modules- http://depts.washington.edu/growth/

  - Evaluate clinic weighing and measuring equipment and talk to your Local Program Consultant if new equipment is needed.
  - Assure equipment is accurately calibrated, is in good condition or even that all sites have the proper equipment

RD Wizard Changes with Client Services 4.4

O Tab

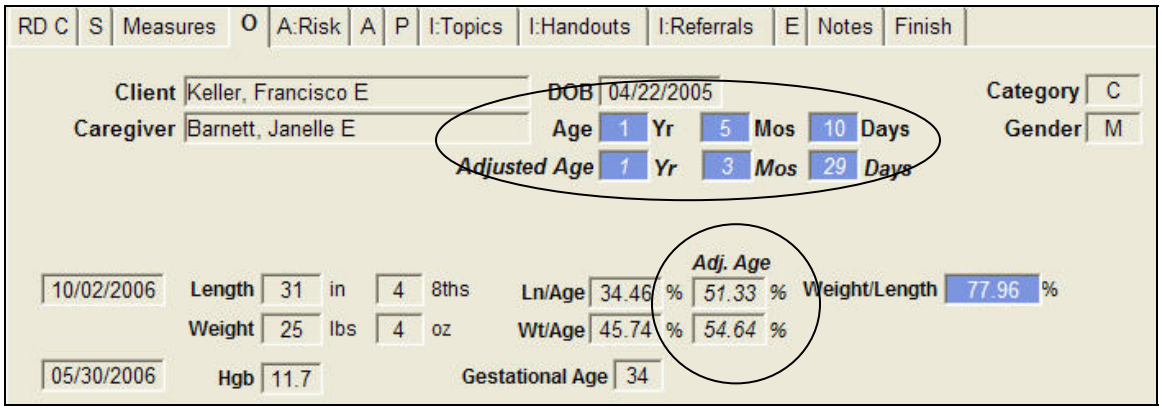
Fields were added for the adjusted age percentiles.

Adjusted Age displays the percentiles if:

- the child is preterm *and*
- the measurement was taken when the child was under two years old.

Premature, under 2 years, with measurements

HRCP: O Tab

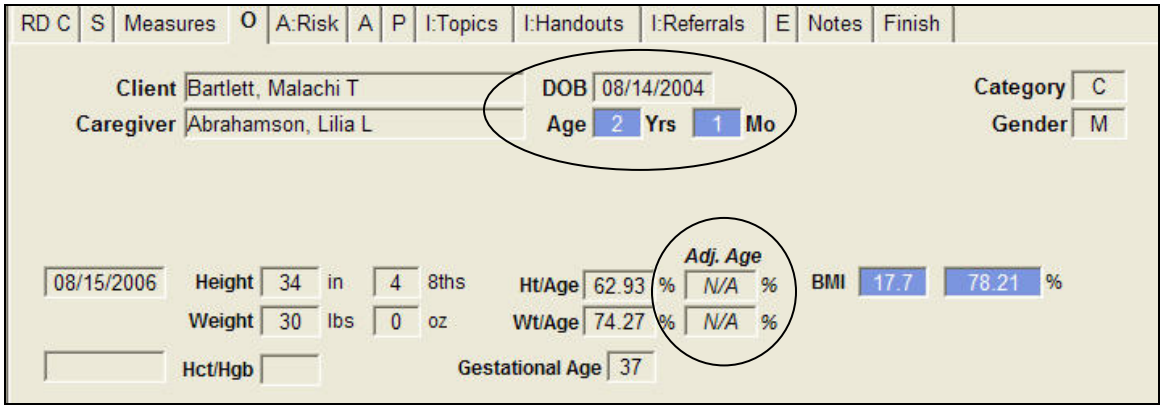


Displays N/A (not applicable) if:

- the child is under 2 years of age, and not preterm
- over 2 years of age

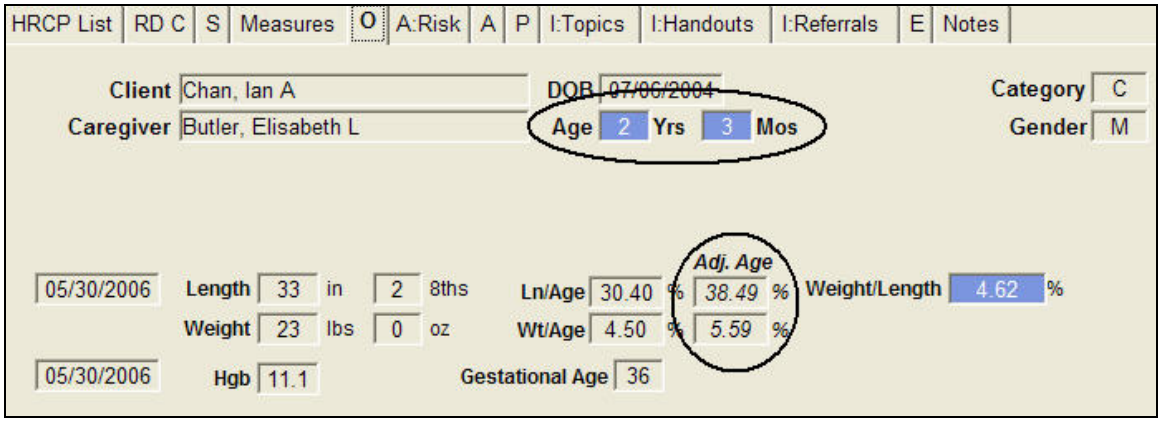
Premature, over 2, with NA showing

HRCP: O Tab



Premature, over 2, last measurements taken before 2 years, no additional measurements taken

HRCP: O Tab



HRCP History & Report

The HRCP Report:

Displays the percentiles if:

- the child is preterm *and*
- the measurement was taken when the child was under two years old.

OBJECTIVE

Age at HRCP: 1 year 6 months
Gestational Age: 37
Adjusted Age at HRCP: *1 year 5 months 9 days*
Birth Length: 19 0/8 in.
Birth Weight: 6 lbs 14 oz

Date of Measure	Length / Height	Ln / Age %ile	*Ln / Adj Age %ile*	Weight	Wt / Age %ile	*Wt / Adj Age %ile*	Wt / Ln %ile	BMI	BMI / Age %ile	Hct %	Hgb g/dl
10/11/2006	L 32 0/8 in	42.06%	*50.55%*	27 # 0 oz	65.92%	*69.68%*	89.80%				
04/05/2006	L 29 6/8 in	53.78%	*65.28%*	24 # 14 oz	80.49%	*85.30%*	95.81%				12.2

Displays N/A (not applicable) if:

- the child is under 2 years of age, and not preterm
- over 2 years of age

OBJECTIVE

Age at HRCP: 2 years
Gestational Age: 37
Adjusted Age at HRCP:
Birth Length: 19 0/8 in.
Birth Weight: 6 lbs 14 oz

Date of Measure	Length / Height	Ln / Age %ile	*Ln / Adj Age %ile*	Weight	Wt / Age %ile	*Wt / Adj Age %ile*	Wt / Ln %ile	BMI	BMI / Age %ile	Hct %	Hgb g/dl
04/11/2007	L 35 2/8 in	74.18%	*N/A*	31 # 1 oz	83.42%	*N/A*	86.22%				
10/11/2006	L 32 0/8 in	42.06%	*N/A*	27 # 0 oz	65.92%	*N/A*	89.80%				
04/05/2006	L 29 6/8 in	53.78%	*N/A*	24 # 14 oz	80.49%	*N/A*	95.81%				12.2

REFERENCE & RESOURCE LIST

Head Circumference Tapes –
Perspective Enterprises circumference measuring tapes with insertion slots maintain circular shape and facilitate measuring head and limb circumference. Re-usable plastic - clean with alcohol.
Measure to 22" x 1/16" - 56 cm x 1 mm.

Order from:
Perspective Enterprises
7829 Sprinkle Road.
Portage, MI 49002

Phone: (269) 327-0869
Toll-Free: (800) 323-7452
Fax: (269) 327-0837
http://www.perspectiveent.com/

pepdc@perspectiveent.com

WEBSITES

Children with Special Health Care Needs
http://www.cshcn.org/news/news.cfm

HRSA (Health Resources Services Administration) Growth Charts Training
http://depts.washington.edu/growth/

Gaining & Growing: Growth Grids for Preterm Infants
http://depts.washington.edu/growing/Assess/Grgrids.htm

REFERENCE BOOKS & TOOLS

Feeding and Nutrition for the Child with Special Needs by Marsha Dunn Klein, M.Ed., OTR/L and Tracy A. Delaney, Ph.D., RD
(Order from the DOH Warehouse)
Specific chapters related to the preterm infant:

- Growth and Nutrition Requirements for the Premature Baby (page 427)
- Breast-Feeding Your Premature Baby (429)
  The Premature Baby at Home: Stress Factors and Feeding (page 433)
- The Premature Baby at Home: Feeding Positions (page 435)
- The Premature Baby at Home: Special Help for Sucking (page 437)
- The Premature Baby at Home: Helping Your Baby Transition to Different Food Textures (page 441)

Nutrition Interventions for Children with Special Health Care Needs
(Order from the DOH Warehouse)
Specific chapter related to the preterm infant:

- Nutrition Interventions for the Premature Infant After Discharge by Joan Zerzan, MS, RD, CD

References Related to Preterm Infants
Provided by Joan Zerzan, RD, MS, CD

Hospital Discharge Guidelines

Hospital Discharge of the High Risk Neonate Proposed Guidelines (AAP) (From Pediatrics Vol 102 #2 1998)

Growth Studies of Preterm Infants

Alexander et al, ***US Reference for Fetal Growth, Obstetrics and Gynecology***, Vol. 87, No 2, Feb 1996, pg 164.

Georgieff et al, Catch-up growth, muscle and fat accretion and body proportionalty of infants one year after newborn intensive care, J Pediatr 114:288-92, 1989

Casey et al, Growth Patterns of low birth weight preterm infants: A longitudinal analysis of a large, varied sample, J Pediatr 117:298, 1990

Kelleher, Risk factors and Outcomes for FTT in low birth weight preterm infants, Pediatr 91:941-946, 1993

Guo et al, Growth in weight, recumbent length and head circumference during the first three years of life using gestation-adjusted ages, Early Human Dev 47:305-325, 1997

Hirata and Bosque, When they grow up: The growth of extremely low birth weight infants at adolescence, J Pediatr 132:1033-5, 1998

Saigal et al, Physical growth and current health status of infants who were extremely low birth weight and controls at adolescence, J Pediatr 108:407-15, 2001

Clark et al, Extrauterine Growth Restriction Remains a Serious Problem in Prematurely Born Neonates, Pediatr 111:986-90, 2003

Infant Weight Gain

Roche and Fomon, Weight gain increments from birth to 12 months J Pediatr 119:355 1991

Nelson et al Weight gain of Breast fed vs bottle fed infants: 8-112 days of age (g/d) Early Human Development 19:223 1989

Bone Mineralization in the Preterm Infant

SA Abrams, Bone Mineralization in former very low birth weight infants fed either human milk or commercial infant formula, J Pediatr 114:1041, 1989

Gary M Chan et al, Growth and bone mineral status of discharged very low birth weight infants fed different formulas or human milk, J Pediatr 123:439-43, 1993

PJ Congdon et al, Spontaneous resolution of bone mineral depletion in preterm infants, Arch Dis Child 65:1038-42, 1990

NJ Bishop et al, Early diet of preterm infants and bone mineralization at age five years, Acta Paediatr 85:230-6, 1996

Recommendations for Growth References for VLBW Infants

Sherry et al Pediatrics Vol111 #4 April 2003

Feeding Studies In Preterm Infants After Discharge

Ernst et al, Growth Outcome and Feeding Practices of VLBW infants within the first year, J Pediatr 117:5156-66, 1990

Lucas et al, Randomized trial of nutrition for preterm infants after discharge, Arch Dis Child, 67:324-27, 1992

Friel et al, Improved Growth of Very Low Birth weight infants, Nutr Research, 13:611-20, 1993

Bishop et al, Increased bone mineral content of preterm infants fed a nutrient enriched formula after discharge from hospital, Arch Dis Child, 68: 573-78, 1993

Chan et al, Effects of human milk or formula feeding on the growth, behavior, and protein status of preterm infants discharged from the newborn intensive care unit, Am J Clin Nutr, 60:710-16, 1994

Rajaram et al, Plasma mineral concentrations in preterm infants fed a nutrient-enriched formula after hospital discharge, J Pediatr, 126:791-6, 1995

Wheeler and Hall, Feeding of Premature Infant Formula After Hospital Discharge of Infants Weighing Less than 1800 grams at birth, J Perinatology, 16:111-16, 1996

Lucas et al, Randomized Trial of Nutrient Enriched Formula versus Standard Formula of Postdischarge Preterm Infants, Pediatr, 108:703-711, 2001

Carver et al, Growth of Preterm Infants fed Nutrient enriched or term formula after Hospital discharge, Pediatr, 107:683-89, 2001

Feeding Challenges

Hawdon, Identification of Neonates at Risk of Developing Feeding Problems in Infancy Dev Med and Child Neuro 2000 42:235

Rommel et al, The Complexity of feeding problems in 700 infants and young children Presenting to a Tertiary Care Institution, J Ped Gastro and Nutrition, J